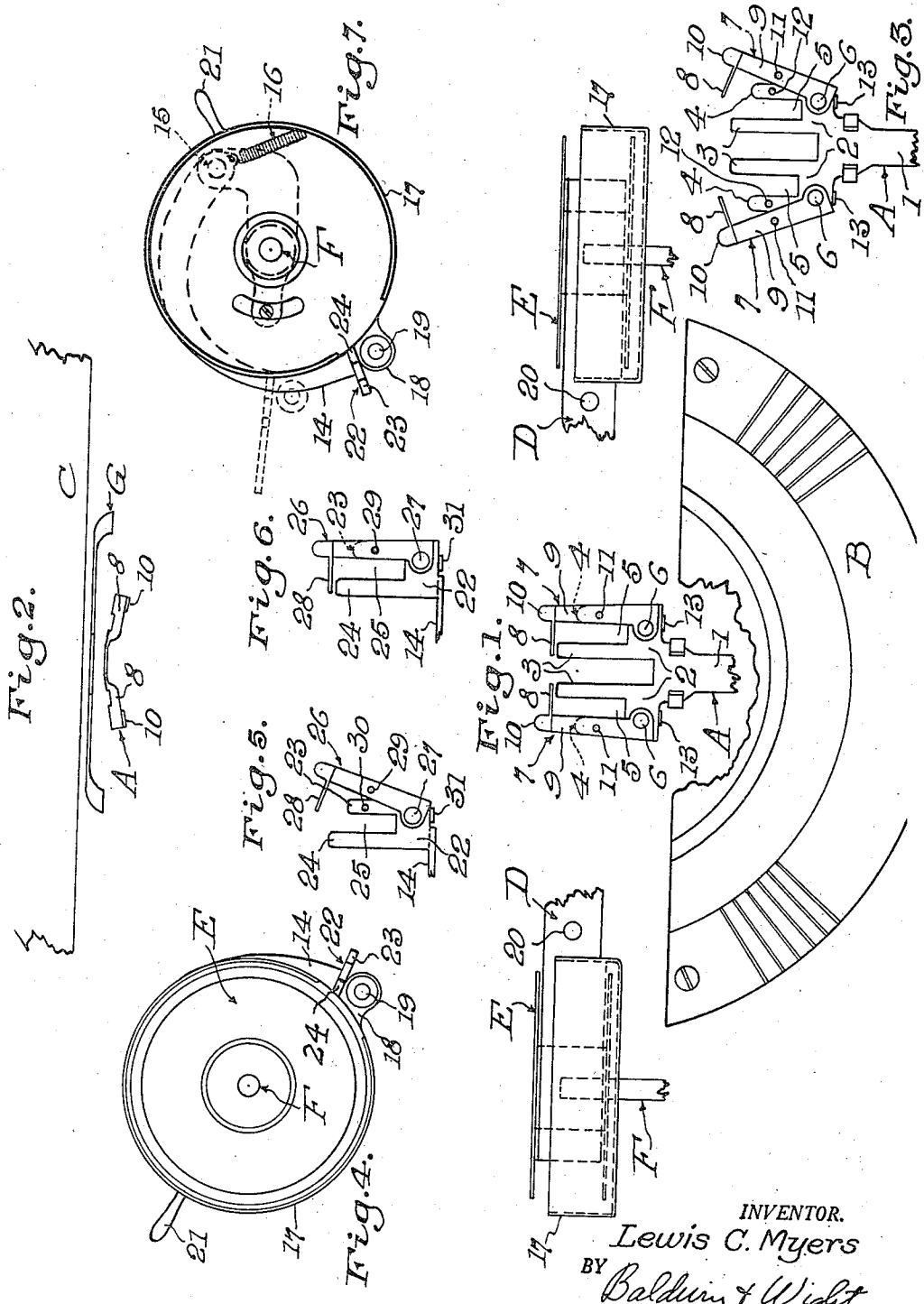
May 25, 1948. L. C. MYERS 2,442,245

RIBBON GUIDE FOR TYPEWRITERS OR LIKE MACHINES

Filed Aug. 26, 1946 2 Sheets-Sheet 1

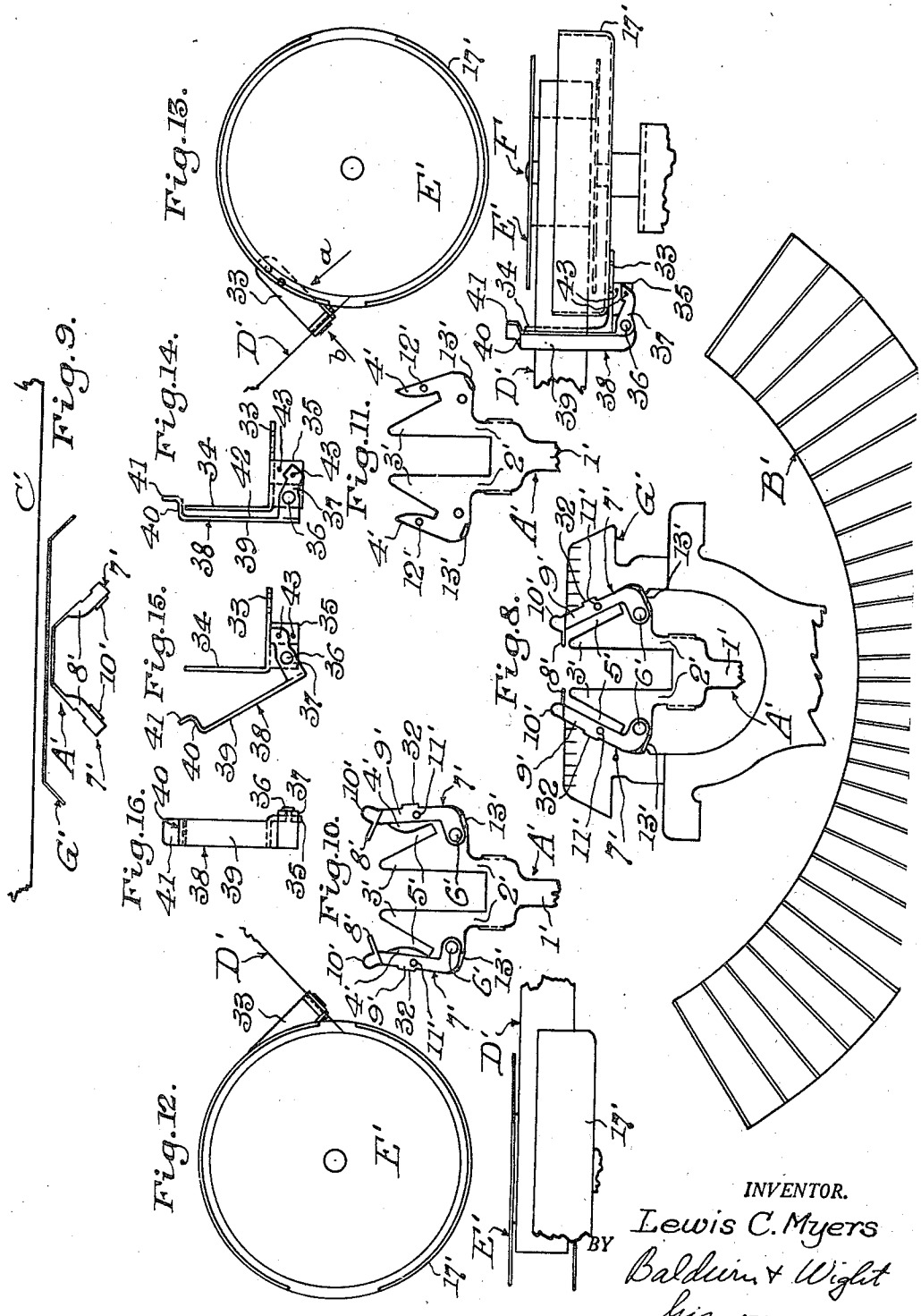


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RIBBON GUIDE FOR TYPEWRITERS OR LIKE MACHINES

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RIBBON GUIDE FOR TYPEWRITERS OR LIKE MACHINES

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6 Claims. (Cl. 197—170)

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This invention relates to ribbon guides for typewriter or like machines, and more particularly to guides of the class referred to which are constructed or equipped to facilitate introducing a ribbon into the guide.

It is well known that commonly used conventional typewriter ribbon guides, for example those embodied in ribbon vibrators or in connection with ribbon reversing mechanism, are so constructed as to require the ribbon to be threaded lengthwise through the guide opening or to be slipped edgewise through a narrow entrance slot leading to the guide opening. This requires rather awkward fingering and handling of the ribbon with consequent loss of time and soiling of the operator's fingers. The same difficulties are encountered in removing an old ribbon.

An object of the present invention is to provide a ribbon guide of the general class referred to including improved means such as a latch or retainer for holding the ribbon against displacement from the guide slot, and which may be moved relatively to the other guide part or parts so as to facilitate inserting a ribbon in or removing it from the guide slot.

Another object of the invention is to provide a guide of the character stated in which the latch or retainer is of improved construction, and is so related to other parts of the guide as to be movable between two definite limit positions determined by stops to prevent damaging of the parts, which otherwise could occur if the latch or retainer were inadvertently to be forced beyond its normal range of movement.

Another object of the invention is to provide a ribbon guide of the character referred to adapted for use in connection with typewriter ribbon vibrators and ribbon reversing mechanism.

Another object of the invention is to provide an improved ribbon guide construction including latches or retainers which are movable substantially horizontally to open and closed position.

Other objects will become apparent from a reading of the following description, the appended claims, and the accompanying drawings in which:

Figure 1 is a fragmentary front elevational view sowing the improved ribbon guide embodied in a typewriter ribbon vibrator, and showing the relation of these parts to certain conventional parts of a typewriter, ribbon latches or retainers being shown in closed positions;

Figure 2 is a fragmentary top plan view showing a ribbon vibrator associated with a guide scale and platen or cylinder;

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Figure 3 is a front elevation of the upper part of a ribbon vibrator and associated ribbon latches, the latches being shown in open positions;

Figure 4 is a top plan view of a left hand ribbon spool cup or housing and a reversing arm or lever formed to be equipped with a ribbon latch embodying the invention;

Figure 5 is a detail view showing a part of the reversing arm or lever in elevation, equipped with a ribbon latch, the latter being shown in its open position;

Figure 6 is a view similar to Figure 5 but showing the latch in closed position;

Figure 7 is a top plan view of a right hand ribbon spool cup or housing and a reversing arm or lever formed to be equipped with a ribbon latch embodying the invention.

Figure 8 is a view similar to Figure 1, but showing a modified ribbon guide construction;

Figure 9 is a fragementary top plan view showing a cylinder or platen, guide scale, and ribbon vibrator of the construction shown in Figure 8;

Figure 10 is a front elevation of the upper part of the ribbon vibrator shown in Figure 8, with ribbon latches or retainers being shown in open position;

Figure 11 is a front elevation of the upper part of the ribbon vibrator shown in Figures 8 and 10, with ribbon latches omitted;

Figures 12 and 13, respectively, are top plan views of left and right hand ribbon spools and cups or housings therefor equipped with a modified form of ribbon guiding device;

Figure 14 is a detail view showing the modified guide device as viewed when looking in the direction of the arrow *a* in Figure 13, a ribbon latch being shown in closed position;

Figure 15 is a view similar to Figure 14 but showing the ribbon latch in open position; and

Figure 16 is a detail view of the ribbon latch as viewed when looking in the direction of the arrow *b* in Figure 13.

Ribbon guides having some features in common with the guides disclosed herein are disclosed in the co-pending applications of David H. Collins, Serial No. 666,742; Arthur E. Davis, Serial No. 666,743; and Lewis C. Myers and William Graepel Serial No. 666,744, all filed May 2, 1946.

A ribbon guide constructed in accordance with the invention is shown in Figures 1 to 3, inclusive, as being embodied in a ribbon vibrator A mounted for vertical reciprocation with respect to a conventional type bar segment B and printing cylinder or platen C. A typewriter ribbon D

is shown as extending between ribbon spools E—E mounted respectively on shafts F—F; and a card guide scale is shown at G.

With the exception of the ribbon guide means with which it is provided, the ribbon vibrator A is of known form, but it may be of other form or construction, and it will be understood that guide means constructed in accordance with the invention may be embodied in typewriter parts other than ribbon vibrators, and may be used in typewriters of different makes or constructions.

The ribbon vibrator A includes a lower portion 1 and two guide proper portions generally designated 2 spaced from each other above the portion 1 and being disposed in front of the writing line of the platen C. Each guide part 2 comprises a vertically extending relatively long finger or guide member 3, and a relatively short finger 4. Each pair of fingers 3 and 4 forms the bottom portion of an open ended guide slot 5 into which the ribbon may be introduced from above.

Pivoted by means of pins 6 on the respective guide parts 2 are ribbon latches or retainers 7, the upper ends of which are formed with keepers 8 adapted to extend across the tops of the associated slots 5 when the latches 7 are in the closed positions shown in Figure 1. When the latches are in closed position, the keepers 8 substantially meet the associated fingers 3 and preferably the keepers extend across or overlap the upper ends of the fingers 3. When it is desired to insert the ribbon in the slots 5—5, the latches 7 are moved to the open positions shown in Figure 3 and the ribbon is inserted downwardly in the slots 5 so as to pass in front of the latches 7 and fingers 4 and behind the fingers 3.

The latches preferably are made of sheet metal, and are formed in a novel manner so as to provide for easy manipulation, and so as to move substantially horizontally instead of vertically, thus dispensing with the necessity of moving the latches above the ribbon vibrator where they would be unsightly. Each latch includes a shank 9 formed near its lower end with an enlargement which is apertured for receiving the pivotal mounting pin 6. The upper end of the shank 9 is turned over to form a horizontal part, the lateral extension of which provides the keeper 8 previously referred to. At the front edge of the keeper 8 and parallel with the shank 9 is an upwardly extending finger piece 10.

In order that the latches 7 may be releasably retained in closed position, each is formed with a pressed out button 11 adapted to engage frictionally in a depression 12 formed in the associated short finger 4 of the ribbon vibrator A. The parts 11 and 12 provide a simple and effective surface catch means for holding the latch against accidental displacement from its closed position.

Each guide part 2 is formed with an ear or projection 13 which extends under the bottom end or heel of the associated latch 7, and is engageable by the latter for limiting its opening movement.

In order to insert the ribbon D in the guide slots 5, the latches 7 are swung to the open positions shown in Figure 3 where they are stopped in predetermined positions by engagement of ears 13 with the bottoms of the latches 7. The form and relation of the parts are such that the latches 7 will be stopped when the keepers 8 are disposed entirely out of the lines of the slots 5. The ribbon can then be inserted by a direct downward movement into the unobstructed slots.

The latches 7 are then moved to the closed positions shown in Figure 1. This movement may be effected conveniently by simultaneously pressing the forefinger and thumb of either hand against the outsides of the respective finger pieces 10 and pinching or squeezing the two latches toward each other. When the latches have been moved to their closed positions, the fingers 3 and associated shanks 9 of the latches will define guide slots having substantially parallel vertical sides, with the keepers 8 overlapping the tops of the fingers 3 so as effectively to close the upper ends of the slots 5.

Figures 4 to 7 inclusive show ribbon guiding means embodying the invention in association with ribbon reversing mechanism. Some typewriters of known or conventional construction are equipped with ribbon reversing mechanism in which a part for actuating the reversing gears or control therefor is moved by a button or projection on the ribbon when the ribbon has been nearly unwound from one spool. Figures 4 and 7 show such reversing actuators 14—14 in the form of curved arms mounted on reversing shafts 15 offset from the shafts F. The actuators 14 are urged to inactive positions by returning springs, one of which is shown at 16 in Figure 7. The spools E are enclosed in cups or housings 17 which are formed with outwardly extending ears 18 on which ribbon guide rollers 19 are journalled.

In conventional constructions of the kind shown in Figures 4 and 7, the outer ends of the actuators 14 are formed with narrow vertical guide slots through which the typewriter ribbon extends. When the ribbon D has been nearly unwound from one of the spools E, a button 20 on the ribbon engages the sides of the guide slot and moves the actuator arm thereby reversing the ribbon drive. The cups 17 may be turned by handles 21 to move the rollers 19 against the actuators 14 to swing the latter to positions facilitating insertion of a ribbon in, or removing it from, the guide slots in the actuators 14.

In accordance with the present invention, the actuators 14 are equipped with improved ribbon guiding means of novel construction enabling a ribbon to be inserted or removed with a minimum of effort and soiling of the operator's fingers. Each actuator 14 is formed with an upstanding projection 22 comprising finger or guide parts 23—24 delineating an open ended guide slot 25. Latches 26 generally similar to the latches 7 described previously, are pivotally mounted at 27. The latches 26 have keepers 28, and buttons 29 which are frictionally engageable in depressions 30 in the guide parts 23. Ears or projections 31 on the parts 22 of the actuators 14 extend under the latches 26 and are engageable with the heels of the latter as shown in Figure 5 for limiting opening movement of the latches.

Figures 8 to 11 inclusive show another form of ribbon vibrator equipped with ribbon guiding means embodying the invention. This ribbon guiding means is similar to that illustrated in Figures 1 to 3 inclusive with the exception that, in the form shown in Figures 8 to 11, additional stop means are provided for limiting the closing movement of the retainers or latches; and the ribbon guiding slots are inclined upwardly and toward the printing point. In view of the general similarity of the constructions shown in Figures 1 to 3 and in Figures 8 to 11, the latter need not be described in detail. Corresponding parts of

the two constructions are designated by similar reference characters with the exception that the reference characters applied to Figures 8 to 11 are primed. Thus, the vibrator A' and the latches 7' shown in Figures 8 to 11 correspond respectively with the vibrator A and the latches 7 shown in Figures 1 to 3, and so on. The additional stop means referred to above comprise ears 32 on the shanks 9' of the latches 7'. The ears 32 extend past and are engageable with the outer edges of the respectively associated guide parts 4'—4' for limiting the closing of the latches 7'—7' so that they will be arrested in the positions shown in Figure 8.

Figures 8 and 12 to 16 illustrate a further form of ribbon guiding means for use in connection with means for mounting and/or housing the ribbon spools E'—E'. Angle brackets fixed to the ribbon spool cups or housings 17' comprise base parts 33, guide parts 34 extending upwardly and angularly with respect to the base parts 33, and depending mounting ears 35. Pivoted as at 36 on each ear 35 is a mounting portion 37 of a ribbon latch or retainer 38. Each latch or retainer 38 further includes a ribbon guide portion 39 and a keeper 40 terminating in a finger piece 41. When the latch 38 is moved to the open position shown in Figure 15, a ribbon may easily be inserted in or removed from the space between the guide portion 39 and the guide part 34. When a ribbon has been inserted, the latch 38 may be moved to the position shown in Figure 14 in which the guide portion 39 and guide part 34 are parallel and spaced to delineate a guide slot 42 closed at its top by the keeper 40.

The latch mounting portions 37 and the associated mounting ears 35 may be provided with surface catch means 43 for releasably holding the latches in their open or closed positions.

The constructions disclosed embody the invention in the forms now preferred, but it will be understood that changes may be made without departing from the invention as defined in the claims.

I claim:

1. In a ribbon guide for a typewriter or like machine, a guide member including a guide part forming one side of a guide slot; a ribbon latch for forming the opposite side of said slot; means pivotally mounting said latch on said member to be moved selectively to a closed position in which the slot-forming portions of said member and said latch are relatively parallel and to an open position in which said slot-forming portions are relatively divergent towards the ends thereof remote from said pivotal mounting, said latch having a keeper which is spaced laterally from said guide-forming part of said member when said latch is in open position, and which extends across the end of the slot and substantially meets said member when said latch is in closed position; and a projection on said member engageable by said latch for limiting the opening movement of said latch.

2. In a ribbon guide for a typewriter or like machine, a guide member including a guide part forming one side of a guide slot; a ribbon latch for forming the opposite side of said slot; means pivotally mounting said latch on said member to be moved selectively to a closed position in which the slot-forming portions of said member and said latch are relatively parallel and to an open position in which said slot-forming portions are relatively divergent towards the ends thereof remote from said pivotal mounting, said latch having a keeper which is spaced laterally from said guide-forming part of said member when said latch is in open position, and which extends across the end of the slot and substantially meets said member when said latch is in closed position; surface catch means on said member and said latch for releasably holding said latch in closed position; and a projection on said member engageable by said latch for limiting the opening movement of said latch.

3. In a ribbon guide for a typewriter or like machine, a guide member including a guide part forming one side of a guide slot; a ribbon latch for forming the opposite side of said slot; means pivotally mounting said latch on said member to be moved selectively to a closed position in which the slot-forming portions of said member and said latch are relatively parallel and to an open position in which said slot-forming portions are relatively divergent towards the ends thereof remote from said pivotal mounting, said latch having a keeper which is spaced laterally from said guide-forming part of said member when said latch is in open position, and which extends across the end of the slot and substantially meets said member when said latch is in closed position; and an ear on said member engageable by said latch for limiting the opening movement of said latch to stop the latch in a position in which the latch and the slot-forming part of said member are divergent and said keeper is disposed out of the line of the slot with parallel sides as formed when the latch is in closed position.

4. In a ribbon guide for a typewriter or like machine, a sheet metal guide member including a long finger and a short finger spaced from said long finger and being connected thereto to form the bottom part of a ribbon slot; a sheet metal ribbon latch; and means pivoting said latch on said member to be moved selectively to a closed position in which said latch overlaps said short finger against one face thereof and to an open position in which said latch diverges from the bottom of the slot, said member being provided with an ear extending past an edge of said latch and being engageable by said latch edge for limiting opening movement of said latch.

5. In a ribbon guide for a typewriter or like machine, a relatively fixed member having a base part, a guide part at an angle to said base part, and a mounting ear; a ribbon latch having a guide portion, a mounting portion at an angle to the guide portion, and a keeper portion; and means pivotally mounting said latch mounting portion on said mounting ear so that said latch can be moved selectively to a closed position in which said guide portion is spaced from and substantially parallel to said fixed member guide part and said keeper extends across the slot between said guide portion and said guide part, and to an open position in which said latch guide portion diverges from said fixed member guide part and said keeper is laterally displaced from said guide part to enable a ribbon to be inserted in or removed from the space between said guide portion and said guide part.

6. In a ribbon guide for a typewriter or like machine a relatively fixed member having a base part, a guide part at an angle to said base part, and a mounting ear; a ribbon latch having a guide portion, a mounting portion at an angle to the guide portion, and a keeper portion; means pivotally mounting said latch mounting portion on said mounting ear so that said latch can be moved selectively to a closed position in which

said guide portion is spaced from and substantially parallel to said fixed member guide part and said keeper extends across the slot between said guide portion and said guide part, and to an open position in which said latch guide portion diverges from said fixed member guide part and said keeper is laterally displaced from said guide part to enable a ribbon to be inserted in or removed from the space between said guide portion and said guide part; and interengaging surface catch means on said latch mounting portion and said fixed member mounting ear for releasably maintaining said latch in its open and closed positions, respectively.

LEWIS C. MYERS.

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